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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,525	11/12/2003	Michael M. Becker	GP123-03.DV1	5863

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GEN PROBE INCORPORATED
10210 GENETIC CENTER DRIVE
SAN DIEGO, CA 92121

EXAMINER	
SISSON, BRADLEY L	
ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,525	BECKER, MICHAEL M.	
	Examiner	Art Unit	
	Bradley L. Sisson	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to as documents have been improperly incorporated by reference. In particular, the specification states:

> **INCORPORATION BY REFERENCE**
>
> All references referred to herein are hereby incorporated by reference in their entirety. The incorporation of these references, standing alone, should not be construed as an assertion or admission by the inventors that any portion of the contents of all of these references, or any particular reference, is considered to be essential material for satisfying any national or regional statutory disclosure requirement for patent applications. Notwithstanding, the inventors reserve the right to rely upon any of such references, where appropriate, for providing material deemed essential to the claimed invention by an examining authority or court. No reference referred to herein is admitted to be prior art to the claimed invention.

Such omnibus language fails to specify what specific information applicant seeks to incorporate by reference and similarly fails to teach with detailed particularity just where that specific information is to be found in each of the cited documents.

Attention is also directed to MPEP 608.01(p)I, which, in pertinent part, is reproduced below:

> Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication. Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found. (Emphasis added)

As set forth In *Ex parte* Raible, 8 USPQ2d 1707, (BPAI, 1998)

> The examiner is of the opinion that the general incorporation by reference of the Bentley disclosure in appellant's specification is insufficient to support the specific disputed limitations of the present claims in the manner required by section 112 of the statute. We agree.
>
> * * *
>
> We believe that the doctrine of incorporation by reference is of no avail to appellant in this regard since there is no specific indication in the instant specification of the particular features disclosed by Bentley which correspond to those intended for use in the here-claimed device; nor does the specification identify the specific portions of the patent which appellant may have intended to rely upon to supplement his disclosure. The purpose of incorporation by reference in an application of matter elsewhere written down is for economy, amplification, or clarity of exposition, by means of an incorporating statement clearly identifying the subject matter which is incorporated and where it is to be found. In re de Seversky , 474 F.2d 671, 177 USPQ 144 , (CCPA 1973).

Accordingly, the cited documents are not considered to have been properly incorporated by reference and as such, have not been considered with any effect towards their fulfilling, either in part or in whole, the enablement, written description, or best mode requirements of 35 USC 112, first paragraph.

Response to argument

2. At page 9 of the response received 13 June 2005, hereinafter the response, applicant's representative asserts that the above statement "clearly manifests a belief that, unless otherwise indicated, the entirety of each of the references being incorporated is relevant to the disclosed invention." Attention is directed to various sections of the specification where certain publications are identified.

3. The above argument has not been found persuasive for there is no specific indication where the other documents provide an adequate written description of the infinite number of primers, probes, and water-soluble polymers encompassed by the claims. While the cited documents may be relied upon to establish what was known in the art at the time of filing and/or teach to the level of skill in the art at the time of filing, the cited documents have not been found

to be properly incorporated so as to satisfy the written description r best mode contemplated by applicant.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Attention is directed to the decision in *University of Rochester v. G.D. Searle & Co.* 68 USPQ2D 1424 (Fed. Cir. 2004) at 1428:

> To satisfy the written-description requirement, the specification must describe every element of the claimed invention in sufficient detail so that one of ordinary skill in the art would recognize that the inventor possessed the claimed invention at the time of filing. Vas-Cath, 935 F.3d at 1563; see also Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572 [41 USPQ2d 1961] (Fed. Cir. 1997) (patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention"); In re Gosteli, 872 F.2d 1008, 1012 [10 USPQ2d 1614] (Fed. Cir. 1989) ("the description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed"). Thus, an applicant complies with the written-description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572.

6. For convenience, claim 1 is reproduced below.

1. (Currently Amended) A kit comprising:

a an in solution, negatively charged polynucleotide probe which preferentially hybridizes to a target nucleic acid present in a test sample under a first set of hybridization conditions;

a water soluble, synthetic polycationic polymer in an amount sufficient to increase the association rate of said probe and said target nucleic acid in said sample under said first set of hybridization conditions; and

a dissociating reagent for dissociating said polymer from said probe and said target nucleic acid in said sample.

For purposes of examination, the claimed kit has been construed as encompassing nucleic acid probes that will hybridize to any target nucleic acid, including that which is known as well as that which has yet to be discovered. A review of the specification finds a Sequence Listing that comprises but three oligonucleotide sequences. While an applicant need not describe each and every embodiment encompassed by he claims, the specification must provide a full, clear, and concise description of he claimed invention so as to reasonably suggest that applicant was in possession of same at the time of filing. The disclosure of three oligonucleotides does not reasonably suggest that applicant was in possession of any and all manner of probes, much less had configured kits to comprise any variety and combination of probes in said kit. In support of this position, attention is directed to the decision in *In re Shokal*, 113 USPQ 283 (CCPA 1957) wherein is stated:

> It appears to be well settled that a single species can rarely, if ever, afford sufficient support for a generic claim. In re Soll, 25 C.C.P.A. (Patents) 1309, 97 F.2d 623, 38 USPQ 189; In re Wahlforss et al., 28 C.C.P.A. (Patents) 867, 117 F.2d 270, 48 USPQ 397. The decisions do not however fix any definite number of species which will establish completion of a generic invention and it seems evident therefrom that such number will vary, depending on the circumstances of particular cases. Thus, in the case of small genus such as the halogens, consisting of four species, a reduction to practice of three, or perhaps even two, might serve to complete the generic invention, while in the

> case of a genus comprising hundreds of species, a considerably larger number of reductions to practice would probably be necessary.
>
> ***
>
> We are of the opinion that a genus containing such a large number of species cannot properly be identified by the mere recitation or reduction to practice of four or five of them. As was pointed out by the examiner, four species might be held to support a genus, if such genus is disclosed in clear language; but where those species must be relied on not only to illustrate the genus but to define what it is, the situation is otherwise.

7. It appears that applicant is attempting to satisfy the written description requirement of 35 USC 112, first paragraph, through obviousness. Obviousness, however, cannot be relied upon for satisfaction of the written description requirement. In support of this position, attention is directed to the decision in *University of California v. Eli Lilly and Co.* (Fed. Cir. 1997) 43 USPQ2d at 1405, citing *Lockwood v. American Airlines Inc.* (Fed. Cir. 1997) 41 USPQ2d at 1966:

> Recently, we held that a description which renders obvious a claimed invention is not sufficient to satisfy the written description requirement of that invention.

Accordingly, and in the absence of convincing evidence to the contrary, the specification does not reasonably suggest that applicant was in possession of the invention at the time of filing.

Response to argument

8. At page 9, bridging to page 10 of the response, applicant's representative asserts that the novelty does not reside in the nucleotide sequence, and that the specification does provide an adequate written description of the probes (and primers), directing attention to page 4, line 18 *et seq.*, page 10, line 8 *et seq.*, page 13, line 3 *et seq.*, page 19, line 22 *et seq.* of the specification. The above argument has been fully considered and has not been found persuasive towards the withdrawal of the rejection. The need for an adequate written description is not relegated to only

the novel aspects or features, but rather, to all aspects of the invention, including those that would otherwise be considered obvious. Such a showing goes to the heart of reasonably suggesting that applicant had possession of the invention at the time of filing. As set forth in *Shokal*, the number of species disclosed increases with he size of the genus claimed. Here applicant is claiming a virtually infinite number of probes and primers, yet provides a sequence listing of 3 oligos. While the specification does provide non-limiting definitions of what the probes and primers could be in terms of composition, length, possible labels, potential targets, etc., such verbiage goes to speak in general terms as to how the probe is to function, not what the specific chemical entity is. Such limitations are not read into the claims and said language has not been found to constitute an adequate written description of the claimed invention. In support of this position, attention is directed to the decision of *Fiers v. Sugano* 25 USPQ2d 1604-5 (CAFC, January 1993) wherein is stated:

> We also reject *Fiers* argument that the existence of a workable method for preparing a DNA establishes conception of that material. Our statement in *Amgen* that conception may occur, *inter alia*, when one is able to define a chemical by its method of preparation requires that the DNA be claimed by its method of preparation. We recognize that, in addition to being claimable by structure or physical properties, a chemical material can be claimed by means of a process. A product-by-process claim normally is an after-the-fact definition, used after one has obtained a material by a particular process. Before reduction to practice, conception only of a process for making a substance, without a conception of a structural or equivalent definition of that substance, can at most constitute conception of the substance claimed as a process. Conception of a substance claimed *per se* without reference to a process requires conception of its structure, name, formula, or definitive chemical or physical properties. . .
> * * * *
> The difficulty that would arise if we were to hold that a conception occurs when one has only an idea of a compound, defining it by its hoped-for function, is that would-be inventors would file patent applications before they had made their inventions and before they could describe them. That is not consistent with the statute or the policy behind the statute, which is to promote disclosure of inventions.

Attention is also directed to the decision of *University of California v. Eli Lilly and Co.* (CA FC, July 1997) 43 USPQ2d 1398 wherein is stated:

> In claims involving chemical materials, generic formulas usually indicate with specificity what the generic claims encompass. One skilled in the art can distinguish such a formula from others and can identify many of the species that the claims encompass. Accordingly, such a formula is normally an adequate written description of the claimed genus. In claims to genetic material, however, a generic statement such as "vertebrate insulin cDNA" or "mammalian cDNA," without more, is not an adequate written description of the genus because it does not distinguish the claimed genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is See Fiers, 984 F.2d at 1169-71, 25 USPQ2d at 1605-06 (discussing Amgen). It is only a definition of a useful result rather than a definition of what it achieves as a result. Many such genes may achieve that result. The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. *See In re Wilder*, 736 F.2d 1516, 222 USPQ 369, 372-373 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material.
>
> Thus, as we have previously held, a cDNA is not defined or described by the mere name "cDNA," even if accompanied by the name of the protein that it encodes, but requires a kind of specificity usually achieved by means of the recitation of the sequence of nucleotides that make up the cDNA. See Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606.

9. For the above reasons, and in the absence of convincing evidence to the contrary, the rejection is maintained.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,928,869 (Nadeau et al.) in view of WO 97/43450 (Cronin) and US Patent 5,200,314 (Urdea).

13. For purposes of examination, the claimed kit has been interpreted as encompassing polycationic polymer that has no mass and as such does not exist. This interpretation is predicated on the non-existence of a lower limit to the mass of the polymer (see claim 6).

14. Nadeau et al., teach at length of probes/primers that may be used both in solution and on a support (column 15). As seen therein the probe/primer may comprise multiple regions, including embodiments where two regions can self hybridize to one another when the target/template is not present. Said probe/primer can also comprise labels, including that which participates in fluorescent resonant energy transfer (FRET, or FET as disclosed therein).

15. The aspect of the amplification reagents being present and were used speaks to the presence of water-based solutions. The presence of water and associated buffers is considered to meet the limitation of "a dissociating reagent" for the presence of water, and/or associated buffers can be used to effect dissociation when the temperature of the solution is changed.

16. Nadeau et al., column 15, lists a plethora of labels and/or tags that can be used in association with the primer/probe. At column 16, Nadeau et al., teaches that donor and acceptor dyes may e affixed to the primer/probes via various methodologies

17. A review of Nadeau et al., fails to find where the aspect of a kit was explicitly disclosed.

18. Cronin, page 6, discloses a method by which hybridization reactions are performed using polycationic polymers such as detergents well as polylysine.

19. Cronin, page 8, teaches using probes that contain a label. The aspect of a probe containing a label is considered to meet the limitation that the probe contains at least one negative charge (contributed from the phosphate groups) as well as at least one cationic charge, which is contributed via the label.

20. Cronin, page 9, teaches that the target can be any form of RNA, which meets a limitation of claims 12-14.

21. Cronin, page 7, teaches explicitly of various temperatures and salt concentrations that the hybridization reaction can be conducted under.

22. Cronin does not teach of pacing the reactants in a kit format.

23. Urdea, column 11, bridging to column 12, teaches of compiling a kit that comprises all of the reagents necessary to perform a hybridization reaction, including detailed written instructions.

24. In view of the explicit teachings of Nadeau et al., as to the composition and form of primers/probe, that they can be sued in solution, one of ordinary skill in the art would have been motivated to have placed aid probes/primers in a kit as disclosed by Urea, along with the

requisite instructions as such would have greatly facilitated the use and commercial success of he primers/probes, not to mention the advancement of research where the products would be used.

25. It would have also been obvious to said ordinary artisan to have further modified the aforementioned kit by including herein the polycationic polymers as they have been demonstrated to facilitate the hybridization/annealing efficiency and accuracy.

26. For the above reasons, and in the absence of convincing evidence to the contrary, claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,928,869 (Nadeau et al.) in view of WO 97/43450 (Cronin) and US Patent 5,200,314 (Urdea).

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

28. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley L. Sisson whose telephone number is (571) 272-0751. The examiner can normally be reached on 6:30 a.m. to 5 p.m., Monday through Thursday.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B. L. Sisson

Bradley L. Sisson
Primary Examiner
Art Unit 1634

BLS
09 September 2005